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CULTURAL ANTHROPOLOGY AND EDUCATION

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The most significant accomplishment of anthropology during the first half of the twentieth century has been the extension and clarification of the concept of culture.[1] Most cultural anthropologists take it for granted that culture is the basic and central concept of their science. Although there is not total agreement among all professionals concerning a precise definition of culture, there is sufficient generic meaning to indicate a considerable need for this science to be included in any total study of the theory and practice of professional education.

Anthropology may be considered the most molar of the social sciences. Conceiving the largest possible units of society as areas of structural-functional study, anthropologists have developed theoretical tools and techniques for describing and analyzing "cultural wholes." These theoretical techniques may have to be enlarged and refined as anthropologists probe to greater depth in the analysis of modern complex cultures. Notwithstanding, the fact remains that culture as culture is the province and specialty of the cultural anthropologists.[2]

When one speaks of anthropology and education, and particularly what the former might contribute to the professionalization and advancement of the latter, there is need for definition and structuralization.

A basic definition of culture, generally accepted for over half a century was afforded by E. B. Tylor. Culture was conceived to be that "complex whole which includes knowledge, belief, art, morals, law, custom, and any other capabilities and habits acquired by man as

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[1] A. L. Kroeber, *The Nature of Culture,* Chicago: University of Chicago Press, 1952, p. 139

[2] John Gillan, "The Application of Anthropological Knowledge to Modern Mass Society," *Human Organization,* Vol. 15, No. 4, Winter 1957. p. 29

a member of society."[3] Leslie White, in an attempt to develop a more precise definition has suggested that culture is a class of things and events dependent upon symboling. White states that "the locus of culture has existence in space and time, (1) within human organisms, i.e., concepts, beliefs, emotions, attitudes; (2) within processes of social interaction among human beings; and (3) within material objects (axes, factories, railroads, pottery bowls,) lying outside human organisms but within the patterns of social interaction among them."[4]

The word "education" has been used in many different ways. From designations of such general character as the totality of influences that both nature and man exercise on our intelligence to a narrow provincial acceptance of mere verbal ability to repeat scriptural doctrine of fundamentalist religions, students and scholars have formulated philosophical and practical definitions of education and the educated man. It would seem advantageous, however, to consider "education" as more directional rather than as many disparate elements which may or may not produce change in men. Emile Durkheim has suggested that from an anthropological and sociological point of view, education must be more meaningful than many modern educational philosophies suggest. Durkheim stated that "education is the influence exercised by adult generations on those not yet ready for social life. Its object is to arouse and to develop in the child a certain number of physical, intellectual, and moral states which are demanded of him by both the political society as a whole and the special milieu for which he is specifically destined."[5]

Even if we agree generally with Durkheim, it would seem necessary to note that education continues throughout adult-life, and that adults can and do learn in both formal and informal situations. At least, both anthropologist and educator agree that formal schooling should assume responsibility for perpetuating the culture and for directing its positive development.

With these definitional preliminaries, we might then address this brief paper to the question: What insights does cultural anthropology afford the educational leader of the mid-twentieth century? Perhaps more specifically, what principles of anthropology have emerged which have import for the administration of educational programs?

[3] *Primitive Culture*, London, 1872

[4] "The Concept of Culture," *American Anthropologist*, Vol. 61, No. 2, April 1959, p. 234

[5] *Education and Sociology*, Glencoe, Illinois, The Free Press, 1956, p. 71

This study has not been of research orientation into the field of anthropology. The study has not been exhaustive in the treatment of what one discipline might provide in fundamental knowledge to another professional curricula. At most, it represents an attempt to review some principles of anthropology which seem to have relevance to the study of education.

THE GROWTH OF CULTURE

The history of man from the Stone Age to the present era is a wonderful story of cultural growth.[6] The social inheritance of man might be understood with greater clarity if considered from the eyes of the anthropologist. Indeed evolution in its multitudinous forms, particularly the technological, social, and political, may be viewed in considerable perspective with anthropological understandings. As a single illustration, one might consider the final work of Ralph Linton, who treated the history of mankind with an emphasis on three basic mutations in the determination of the course of human culture.[7] These were: (1) the use of tools, fire, and language; (2) the discovery of how to raise food and domesticate animals; and (3) the discovery of how to obtain power from heat, and how to use the scientific method. Linton suggested that mankind may well be found within the fourth mutation involving the use of atomic energy and the penetration of space before he is fully adjusted to the third phase.

With respect to our own complex society, as well as the primitive, the key to any growth or even the transmission of culture must be an understanding of it. The modern educator, at any level of instruction, cannot afford to neglect knowledge of his total inheritance or the role he plays in building upon it.[8]

THE HISTORY OF EDUCATION

An analysis of the history of education through the eyes of the anthropologist substantiates the fact that educational institutions of the twentieth century are the products of several centuries of cultural growth. The impact of universal education felt in the twentieth cen-

[6] Ruth Benedict, "The Growth of Culture," in Harry L. Shapiro (editor) *Man, Culture, and Society*, New York: Oxford University Press, 1956, p. 188

[7] *The Tree of Culture*, New York: Alfred A Knopf, 1955

[8] George A. Spindler, *The Transmission of American Culture*, Cambridge: Harvard Graduate School of Education Publication, 1957

tury stems from a concept of its possibility during the past century. The culture not only demands its fulfillment in the public schools at the present time, but is now demanding that institutions of higher learning prepare to accept it.

Historically, the individual student sought out the teacher; now the teacher is brought to large numbers of pupils. Teaching became more than tutoring, and the culture demanded teaching skills of greater complexity than parents, tutors, or apprenticeship could handle. Thus, from a primitive pattern affording presents and gifts to a single man one hoped would teach his child, American society has shifted to a pattern of forcing all children, and even adults to learn. More than this, there has been consistent effort on the part of the body-politic to equip schools, train teachers, and effect sanctions to make children and young adults learn.

A survey of educational history supports an anthropological thesis that the realistic adaptation of dominant-status adults to new conditions has been more responsible for the development of universal education than the "needs" of children as children.[9] Intelligent cultural patterns may be traced, however, to series of minor changes suggested to children in school, and which are promoted forward when these children reach the adult dominant status.

In historical perspective, but in light of educational objectives, it is possible to trace a reduction in much of the inhumaneness man has manifested to man. This problem has not been completely solved, however, but in a projection of the history of education it is possible to contemplate an increase of interpersonal, inter-cultural, and inter-societal understandings. Certainly, this is a basic need in a world which can be circumnavigated in a matter of hours, and one to which schools should give attention as a means of eliminating prejudice, bigotry, and provincialism.

THE COMPARABILITY OF ALL HUMAN CULTURES

One of the basic emphases of cultural anthropology has been the comparability of all human cultures. This concept has profound implications for education. Although anthropologists have observed that each human culture is unique and embodies a whole way of life for the people within, since World War II there has been greater emphasis upon the "comparability concept." Margaret Mead has summarized

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[9] Ralph Linton, "Potential Contributions of Cultural Anthropology to Teacher Education," *Culture and Personality*, Washington D.C.: American Council of Education, 1941

an emergent principle. "Each viable human culture, whether that of a handful of Eskimos or of a nation of fifty million people, must be seen as a system which contains provision for all 'normal' human beings who are born within it, with the recognition that, as we make technical and ethical advances, more previously discarded individuals, such as the blind, the deaf, the cerebral palsied, will be included within the communication system of the culture."[10]

Studies of cultural comparabilities have also indicated that a language or mores, or any other part of a whole system of a culture, developed by one group of human beings can be learned by normal human beings in another group.[11] In fact, anthropologists have concluded that people can be shaped in almost any direction. Questions remain chiefly in the area of "control," and how far the direction of cultural growth might be determined by educators, or anyone who presumes to teach children or adults.

PATTERN CHANGE

Concomitant with general knowledge acquired by studying the comparability of cultures has been the mores specific understandings of "pattern-change." The behavior of people is not haphazard, but conforms to a pattern, and parts of the pattern of behavior are inter-related.[12] It has been concluded, by the anthropologists, that the life of a people may be oriented in many different, yet definite directions, and that while *value-judgments* may not be analyzed with strict scientific validity, *values per se* seem to be a most important subject for objective consideration.

Whereas, historically, it was assumed that slow educational change was necessary for the welfare of people caught in cultural-lag, it is now suggested that rapid change, in which a whole culture is transformed, may be less traumatic than slow, uneven change. Margaret Mead has stated that "groups, primitive or present, who have a clear, coherent cultural tradition may be able to change their entire way of life in a very few years, carrying the entire community, grandparents,

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[10] "Cultural Factors in Community-Education Programs," *Community Education: Principles and Practices from World-Wide Experience,* The Fifty-eighth Yearbook of the National Society for the Study of Education, Chicago. University of Chicago Press, 1959, p. 91

[11] *Ibid,*

[12] Eugene A. Nida, *Customs and Cultures.* New York: Harper & Brothers, 1954

parents, and grandchildren with them, and take on a new view of life in a very few years, provided they are presented with living models of the new culture."[13]

With this possibility, educators find themselves face to face with the question posed by George Counts three decades ago: *Dare the Schools Build a New Social Order*.[14] Although Leslie White and other advocates of the science of "culturology" or cultural determinism would reject any such possibility, the evidence is not conclusive in their favor.[15] Certainly, there is evidence that the culture has controlled to a considerable degree the development of educational patterns. In the context of interaction, however, one cannot deny the influence on culture of new ideas or the power of a dynamic personality.

Essentially, if the educator should attempt to change society, the task would be that of teaching different values, even though many values lie beneath the realm of consciousness. And if education can proceed with full recognition that new conditions of life may be met and new patterns of culture emerge through understanding the real importance of how man thinks and feels rather than how he behaves, there may be greater correlation between the objectives of education and the achievement of the pupil.

The anthropologists have not answered the question concerning whether or not the schools should build a new social order. They have not indicated how much educational effort would be needed to change cultural patterns. They have indicated the possibility.

THE VALUE SYSTEM OF A MODERN CULTURE

An analysis of various values and value-systems in both primitive and modern societies affords considerable insight in understanding the behavior of people. Thus, the utilization of an "ethos approach" may be most important in studying a community or a nation, and ultimately important in developing improved programs of education.

John Gillan has noted that the ethos approach suggests that even complex cultures have a "core" and that once this is understood the other aspects of the culture can, in part at least, be interpreted in terms of it. "The search for a common ethos or basic controlling pat-

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[13] *op. cit.*
[14] New York: The John Day Company, 1932
[15] Leslie A. White, *The Science of Culture*, New York: Grove Press, 1949

tern, or value system of a modern culture, is an attempt to grasp a reliable conception of the culture as a whole while avoiding the methodological difficulties presented by large scale complexity of sub-cultural content and integration, and revolutionary change."[16]

Values are the principles of a culture. Even though there are usually differences between what is believed, and what is said and done, some anthropologists have noted that the "ideals" proclaimed by men are in a sense the ultimate value system of a culture.[17] Only by understanding the ideal value system, the emotional intensity man attaches to some values within the system, and the relationship of these values to the behavior of people within the culture, does the culture fit into a pattern and effect closure.[18] A. L. Kroeber has appraised this aspect of anthropological study. "We can act as if our culturally acquired but preferentially held values were absolute, and, in general that is what we do when we have to act, even if we consider ourselves relativists. We do not review the hundreds of other value systems and paralyze our decision, but we use our own value system, act according to it, and abide by the consequences. As human beings, that is all we can ordinarily do."[19]

Values then may be considered permanent and relative. Education becomes the means whereby values might be recognized for what they are, and educators become the agents of interaction in promoting the acceptance of values, which might afford the establishment of a better society in which to live.

COMMUNITY STUDIES AND TECHNIQUES OF THE ANTHROPOLOGIST

The "ethnologizing" of modern national cultures has been a step forward in understanding the behavior of individual man and his group-life. Ethnographical studies of sub-cultures, or of single communities within a nation, are important for teachers interested in developing insights concerning the behavior of children. These community studies have indicated that a method of science can be devel-

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[16] "The Application of Anthropological Knowledge to Modern Mass Society," *Human Organization,* Vol. 15, No. 4, Winter, 1957, p. 26

[17] See: Ethel M. Albert, "The Classification of Values," *American Anthropologist,* Vol. 58, No. 2, April 1956

[18] A. L. Kroeber, "Concluding Review," in *An Appraisal of Anthropology Today,* (Sol Tax, *et al.,* editors,) Chicago: University of Chicago Press, 1953, p. 373

[19] Kroeber, *op. cit.* p. 376

oped in a study of group-life.[20] And, science without a method is of little merit regardless of the number of data one might collect. Indeed, the collection of data has become indicative of the entire corps of teachers and professors during the past decade. But of what value is the data? How are these data to be interpreted? Anthropology has given some direction in this field.[21]

The ethnographical method has at least developed a means of classifying sources according to time, place, and manner by which information is obtained. Ethnographical studies of community life have provided information showing important "power-structures" and informal organizations operating in society. These studies have also been helpful in determining the real *values* held by people in a community.

Anthropologists have developed interviewing techniques as a scientific means of extracting valid information from "real" people. The techniques have been clinical rather than statistical, documentary, or of the questionnaire variety. The anthropologist has developed the research technique of "participant-observer" to a considerable degree of proficiency. Conclusions made through the use of these methods of research may be more valid than many other common techniques used by other social scientists.

CULTURE AND PERSONALITY

No other subject has been afforded more deference and investigation by the psychologist and educator than has that of "personality." One can only be impressed with the vast amount of research in both psychology and psychiatry which has promoted a better understanding of the concept, structure, and development of human personality. The anthropologist has related this most molecular of the social sciences, psychology, to the analysis of man's personality as a social being. Personality is an organization which lies behind behavior and and within the individual. Values learned in early childhood become persisting forces of personality, and help in the determination of responses to various social situations.

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[20] Ralph Linton, "Potential Contributions of Cultural Anthropology to Teacher Education," *Culture and Personality*, Washington D.C.: American Council on Education, 1941, p. 15.

[21] W. Lloyd Warner, *Structure of American Life*, Edinburgh, The University Press, 1952

The social life of man cannot be observed in totality if separated from societal means and values, or in separation from the psychological structuralization of the individual.

Thus, any explanation of culture should indicate cognizance at the psychological level. It is necessary to keep in mind that culture as a social fact is constantly impinging upon the development of the individual personality. While in turn, the causes of cultural phenomena are persons. Thus, personality, culture, and society form systems of integrated "wholes" having real existence only in consideration of each other. The phenomenon of *interaction* again assumes a position of primary importance.

ANTHROPOLOGY AND HUMAN NATURE

It would seem as if the most important contribution anthropology has made to the study of man, his intellectual and physical development, his culture, and his emotional dispositions, is to be found in the analysis of *human nature*. Indeed, the findings of anthropologists give foundation for the proposition that education can improve society by discarding historical concepts of the innate nature of man. Most of what we have previously called "human nature," and upon which culture has been built, is not "nature" at all. Early training and the inculcation of values at an early age has been mistaken for human nature. Linton proclaimed that "we have positive proof that most of the values and attitudes which cause trouble in our own society cannot be innate since they are lacking in one society or another."[22]

Cutting across both science and the humanities, and the social and behavioral sciences, anthropology substantiates the proposition that human equality is possible and valid.[23] Anthropology has thereby denoted additional responsibility to the role of the educator. Recognizing the importance of facts in transmitting culture and in suggesting improvement, it has been noted that the interpretation of these facts may be more important. Teachers and professors have a great responsibility in assuming the role of "interpreter."

Ashley Montagu has summarized an anthropological point of view respecting human nature. What anthropology is capable of doing for the student, at all levels of education from the elementary school

[22] Linton, *op. cit.* p. 12

[23] A. Irving Hallowell, "Culture, Personality, and Society," in A. L. Kroeber, (editor) *Anthropology Today: An Encyclopedic Inventory,* Chicago: University of Chicago Press, 1953

to the university, is first and foremost to give him an understanding of his own place in the world in relation to the rest of animated nature in all its forms. It is important for the healthy development of the person to be rooted in the great tradition—and all its varieties—of humanity. It is the great understanding of what it means to be human that is the principal contribution that anthropology has to make to the human being in process of being taught to be human. And learning to be human, and to understand what this involves, should it seems to me be the principal purpose of education to which all else is secondary. It is perhaps only when this has been fully recognized that anthropology will assume its proper place at the centrum of all general education."[24]

In a personal reference, Montagu writes with firm belief that no other subject is capable of humanizing the student as is the study of anthropology. "And by 'humanizing' I mean not only enabling the student to feel that nothing that is human is alien to him, but to remain all his life, actively interested in constructively increasing his own and others' understanding of what it means to be human. Today more than ever such understanding has become critically necessary. And I would go so far as to say that of all forms of understanding this will always remain the most adaptively valuable. I know of no other subject which can teach us more helpfully how to understand other societies, or how best to meet their needs."[25]

Undoubtedly, one of the most insidious anachronisms faced by the modern educator has been the faulty interpretation of human nature on the part of many societal groups. Historically, many beliefs about human nature have created "trapped universals" in the minds of men to the extent that the most important species characteristics of man, thinking and high educability, have been thwarted by the time the child enters school. In a vicious circle, man has continued to develop educational programs based upon concepts of human nature suggesting an intrinsic "goodness" or "badness" of himself rather than upon propositions more nearly validated by the sciences.

At first sight, this seems like a hopeless dilemma, for men can teach only what they know, and they have known so little about human nature. Anthropological research has indicated an avenue whereby man might find convergence for his many conflicting concepts of his being.

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[24] M. F. Ashley Montagu, *Anthropology and Human Nature*, Boston: Porter Sargent Publisher, 1957, pp. 3-7
[25] *Ibid.*

It has been suggested that "anthropology holds up a great mirror to man and lets him look at himself in his infinite variety."[26] In his mirror, man might see that he is indeed unique, reflecting both biological and psychological propensities affording creative expression beyond cultural necessity. In contemplating his variety, man might adopt humility and perspective, building character without external sanction, which will afford him greater opporunity of "means" to greater opportunity of "ends."

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[26] Clyde Kluckhohn, *Mirror for Man*, New York: Whittlesey House, 1949

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AN EDUCATIONAL EXPERIMENT WITH ON-CAMPUS OPEN-CIRCUIT TELEVISION

Robert W. Janes

Most universities and colleges using television for on-campus instruction depend upon closed circuit facilities. Scheduled courses are rarely transmitted by open circuit over a public channel to students in campus classrooms. Closed-circuit transmission is operationally more economical and it offers advantages of greater control over quality of the signal. Its use also represents the diffidence of both instructors and administrators to permit an anonymous, un-invited audience of unkonwn background to sit in on classes scheduled for viewing by regular students. The question, however, can be raised, are there pedogogical or administrative advantages which might be gained through transmitting regular courses by open-circuit to resident students as part of their curricular program.

The present study probes the issues of this question by examining the results obtained from the experimental presentation of a large on-campus course by open-circuit. Its conclusions are that certain unique gains relative to student motivation and to increasing the available space for television viewing may be achieved through this mode of transmission. These advantages, moreover, do not appear to be outweighed by the consequences of giving an un-invited, non-student, community audience the privilege of viewing televised lectures.

THE EXPERIMENTAL CONDITIONS

This course was offered by open-circuit for regularly enrolled students at a large mid-Western university in 1958 and 1959. During this period the student body numbered about 19,000, and the community in which the university was located was slightly more than 50,000 in size of non-student population. The course was a one-year introduction to general social science open to freshmen and sophomores. The enrollment came principally from Liberal Arts and Sciences and the College of Education. The course schedule called for two lectures and two discussions for each student. Each lecture was offered twice, once in a large lecture hall and once by open-circuit television.

The primary variable in the experimental situation was that the students enrolled in the television lecture were given the opportunity to view the lecture wherever they had access to a television set which could receive the signal from the university transmitter whose radius of reception was roughly twenty miles. Four classrooms were equipped with sets for students who wished to view the lectures in university buildings. The problem of the study was to discover what places the students selected for viewing, to estimate what factors led to these choices, and to explore what influence this freedom of choice of view-

ing place had on academic performance, on class and lecture attendance, on attitude toward a television presentation and on interest in the subject matter. The control group for the study was the group of students who attended the lecture in a large classroom. One additional element in the design was that any student whose schedule permitted could transfer from either lecture section to the other.

THE DATA

The data for the study included two questionnaires administered the fourth and fourteenth weeks of the semester, interviews with students, observations made of behavior both in television and classroom lectures, and reports from discussion leaders on comments and questions raised by their students on the conditions of television preparation. Information was also secured on housing units which would permit the viewing of the television lectures on the premises.

The principal measures which gave answers to the problem of investigation were rating scales on the two questionnaires which were identical and which were regarded as a pre-test and post-test of experience with the conditions of open-circuit presentation in the course. The items rated include attitude toward presentation of the lectures, the attitude toward the content of the course, and the rating of the course relative to other courses. An item was also included for the student to report the number of times he cut classes.

Those acquainted with the ways and opinions of students know other influences than the lectures and content of the course may influence the student rating of the presentation of a course. To allow for such possible influences, items were included on the student's estimate of his happiness with campus life and the favorableness of his attitude toward his discussion and discussion leader.

STUDENT REACTION TO THE EXPERIMENTAL SITUATION

At the beginning of the semester, of the 375 students registered in the course, forty-seven per cent were in the television lecture and the balance in large classroom lectures. By the fourteenth week, however, eleven per cent of those originally in the large classroom had transferred to television viewing while slightly less than two per cent of the original television lecture had gone over to the large classroom.

The major point of interest in the experiment was where would the students choose to view the television lecture if they were given complete freedom of choice of the viewing situation. Four university classrooms had been equipped with receivers for those who wished to use a university building. There was also the question would the students regularize their lecture-viewing habits. Eighty-six per cent of students saw the lecture predominantly in one place while fourteen

per cent used a combination of places. Slightly more than half of the habitual viewers used the university classrooms. Of the remainder who habitually saw the lecture in the same place, almost all of them viewed it at their place of residence although there was a small group who used the University YMCA.

The type of housing in which the student lives appears to be the major determinant of his choice as to where he will view a course lecture by television if he is given the opportunity to choose. It should be noted that such a choice is not a completely free choice because some students do not live in residences where television sets are accessible at the lecture hours, and for other students their class schedule is such that it is more convenient to go to a classroom equipped with television rather than return to their residence. In this study, however, the opportunity given to students to make the decision was truly experimental because it was not known at the beginning of the semester how the students would respond to the opportunity to select their place of viewing the lecture. If all the students in the television lecture had chosen to use the university classrooms available to them, instead of their places of residence, it would have been necessary to provide more television classrooms.

The residence units in which students live reflect the social composition of a campus. This composition will vary, of course, by university and college. In some schools almost all students will live in dormitories, in other schools there will be varied combinations of residence—dormitory, fraternity-sorority, independent rooming houses, apartments, home of student's family, etc. Of the students in this particular course slightly more than half of the television lecture group lived in university dormitories, and the remainder were equally split between fraternity-sorority and independents with a slim few living at home. The dormitory students were most likely to view the lectures at their place of residence. Forty-three per cent of this group habitually saw the lecture in the dormitory while about one-third of both the fraternity-sorority and independents habitually view it in place of residence.

REASONS FOR CHOICE OF PLACE OF VIEWING

Students gave a variety of reasons for their choice of place to view the television lecture. These reasons could be summarized as positive and negative reactions to the conditions under which the lecture was viewed and as lack of alternatives to view the lecture any other place than where the student did. The latter category applied only to the classroom viewing group who said that there was no other set available to them at that hour or that their class schedule did not permit them to go elsewhere. Reaction to the conditions of viewing was, in

general, positive for residence and non-classroom places and negative to classroom.

Positive reactions which favored non-classroom situations referred to informal atmosphere, the privilege of smoking, more comfortable seats, better vision of the television set, convenience of not having to leave the residence in bad weather, smaller size of the viewing group, watching the lecture with "friends" and the possibility of more effective control of distractive behavior by others. Negative reactions, directed entirely to the classroom situation, included dislike of the large size of the group, poor angles of vision to the set, inadequate ventilation, the requirement of no smoking, uncomfortable seats, and the distractive behavior of other students which could be controlled only by presence of an instructor in the room. The student references to this last point appeared puzzling because the instructor who visited the classrooms in the course of the lectures had reported such behavior only in unusual cases. The fact of such behavior was confirmed when a research assistant, of definite undergraduate appearance, stayed unknown to the other students in the classrooms during the lectures. Her observations indicated that the departure of the instructor was often the signal for such behavior as conversations, newspaper reading, and general inattention.

For some students other reasons were reported as determining their choice of place of viewing. Certain fraternities and sororities required that pledges could not study in the house during the day, and students from these groups had to attend the television classrooms. Once these students became actives they could view the lecture in the chapter house. Some of these who viewed the lecture at the YMCA stated that they went there to meet friends at the lecture and so that they could bring food and coffee to the class.

ACADEMIC PERFORMANCE

Academic performance in the course was taken to include both the student grade earned on examinations and the attendance at lectures reported by the students themselves on the questionnaires. Reported attendance at lectures is of special interest because the provisions of the experiment put the students in the television lecture very much on their own as to whether or not they should view the lecture. They were removed from the normal social control of going to a classroom where their presence might conceivably be observed by members of the staff of the course or by their friends enrolled in the course. The great majority of these students were freshmen whose academic motivation and study habits could not, as yet, be regarded well-defined. Their reported attendance, therefore, appeared to be significant.

The effect of television presentation on academic performance was determined by comparing the experimental group in terms of examination grade and reported class cuts to the control group consisting of those who attended the lecture in a large classroom. The average grade of the television group was a middle C and that of the classroom group was a high C. Given the size of the samples and the standard deviations in examination scores of the two groups, this result was significant at the .05 level which meant that it was unlikely that it could be attributed to chance. Most studies have shown no significant difference in examination scores of students taking the same subject by either large class lecture or by television. Therefore, rather than attribute this disparity in academic performance to the effect of the television presentation, it seemed appropriate first to compare the two groups as to their academic capacity. Since, most of the students were first semester freshmen there was no over-all record of college grades available. The ranking in high-school class, therefore, was used, and it showed that there was a significant difference; the classrooms group average was the 1.57 quartile of their high-school class and the television group averaged the 1.79 quartile. Thus, the students who were in the television lecture had slightly poorer high-school records. It would seem correct, then, to attribute this poorer showing on examinations to a lower order of previously demonstrated ability of the television group rather than to the effect of the television presentation.

Further examination of the examination scores and ability rating of the television class clarified the differences in scores. Those students with the lowest scores and lowest high school rankings were mainly in the fourteen per cent of the class who did not regularize their place of viewing the lecture in either the classroom or residence. These persons obviously had poor study habits and according to observations of their discussion leaders seemed more disorganized in their adjustment to the academic demands of campus life than the typical student. The students who regularized their place of television viewing had the same grades and high school ranking as the average of control group. It would appear from these figures that poorer students adopted a distinctive and unorganized pattern of television viewing under the conditions of the experiment.

In respect to lecture attendance, there was also a significant difference between the experimental and control group. The television class reported only three-fourths as many class cuts as did the classroom group. A factor which may have influenced these figures is that the classroom lecture was at 8:00 A.M. and the television lecture at 2:00 P.M. It may also be, as several students noted, that occasionally it is more convenient to attend a lecture that is available in one's

residence than to return to a campus classroom. The campus in question is a large one, and many dormitories, fraternities and sororities are located at a considerable distance from the classrooms. The most important implication of this finding, however, is the fact that students when released from the influence exercised by the physical presence of the instructor in a classroom will apparently conscientiously view the lecture. Of course, it is possible that the students consciously underestimated the number of cuts since they knew no check on their report was possible. However, since attendance was not taken in the classroom lecture, the same consideration should hold for the reporting by the classroom group. It would appear, then, that the students, at least, attended lecture under the experimental conditions as often as they did under the control situation.

ATTITUDES TOWARD THE COURSE AND THE EXPERIMENTAL CONDITIONS

How did the presentation of the subject of general science by the experimental conditions affect the attitudes of students both toward the subject matter itself and the method of presentation? Information on this point was derived mainly from the two questionnaires. Two measures of attitude toward the course were used—first, how favorable to the course as a whole, content and conduct, did the student feel, and, second, how did the student rank his preference of this course relative to all the courses he was taking. In regard to both of these items there was no statistically significant difference between the experimental and control group. In other words, the experimental conditions of presentation did not influence the attitude toward the course. The course, incidentally, was rated slightly above average in preference of all the courses taken by those enrolled in it.

In respect to mode of presentation both groups were asked to express their preference for which type of lecture they would prefer, large lecture or the experimental television presentation. The results here represented the most significant difference of all the items on the questionnaire. The average of the television class was definitely in favor of the experimental presentation, and the average of the control group preponderantly favored large classroom lecture. Statistically these differences were significant at the .001 level, and they indicate that in a course such as this students prefer the type of presentation which they have experienced in the course. There were some deviant cases among the experimental group, almost all of them being students who viewed the lecture in university classrooms. The objection of these students, however, was to the classroom conditions of viewing and not to the televised lecture itself. It would appear, then, that the conditions of the experiment did not prejudice the television group against that type of class presentation. Further, this

statistic suggests that perhaps there is certain fatalistic acceptance on the part of students that whatever mode of presentation they experience for the duration of a course is most satisfactory to them. It should be noted, of course, that the students were aware of the two kinds of presentation and that there was some discussion among themselves comparing the two modes.

NON-STUDENT VIEWING

Since the lectures were broadcast on an open channel, any set within the receiving radius could have been tuned to it. This was a social science course, and it treated such controversial topics as race, evolution, religion and politics including an analysis of communism as a political system. Academics have been extremely sensitive how a non-student viewing audience might respond to the treatment of such topics when they are seen without understanding or appreciation of the instructional context within which they are being presented. In this case any such apprehension would appear to have been unfounded. Some non-student viewers did tune occasionally in on the course since they commented informally upon several lectures to the staff of the course. These persons, however, were all either faculty or faculty wives. Only one non-student wrote to the lecturer, and this person could be put in the crank category since her communications dealt with her personal problems without any detectable reference to the lectures. It might be added that in a following semester the second half of this course was broadcast in the evening from videotape just as an experiment as to how many local people might view it. Interest appeared to be minimal. Requests were made during the program for expressions of desire that the series be continued and not one indication of viewer interest was received. Such evidence suggests that academic concern over the consequences of unscheduled reception open-circuit broadcasting of campus classes may be overexaggerated.

SUMMARY AND CONCLUSIONS

Open-circuit transmission of one lecture in a scheduled class for resident students was made the basis of an experimental situation. Students were given freedom to choose the place on campus where they would view the lecture, either in university classrooms or elsewhere. The aim of the experiment was to determine the factors influencing and the academic consequences of this choice. The control in the experiment was the group of students attending the second lecture in the course which was given in a large classroom. Students were also given the privilege of changing from one lecture to another if their class schedule permitted.

The conditions of television presentation apparently had greater appeal than classroom lecture since about ten per cent of the classroom group transferred to the television section while almost none transferred to the classroom. Forty-six per cent of the experimental group selected the university classrooms as the place they attended most regularly, forty per cent chose some other place, generally their residence. Fourteen per cent did not regularize their place of viewing but attended at a combination of places.

The student's place of residence appeared to be a major influence on his choice of a place of viewing. Forty-three per cent of those living in university dormitories selected them for regular attendance. One-third of those living in fraternities, sororities or independent housing chose these spots.

The reasons given for attending at place of residence were positive about the conditions of viewing and negative about the conditions in the university clasrooms. The reasons given for watching in the classrooms were convenience of class schedule or that no other set was available.

In respect to academic performance the control group made slightly better grades, but on the average they were slightly better students as measured by their high school records. The group which did not regularize its place of viewing were students who had made the lowest grades in the course and had a low high school scholastic record. The experimental group reported that they cut lectures somewhat less frequently than the control group. The type of presentation which the student in each group favored was that which they exper-preference for it among other cases taken did not show significant ienced during the semester.

Attitudes of approval of the course as a whole or the ranking of variation between the two groups. There was no evidence of interest in or negative reaction to the course on the part of non-student viewers in the community.

A number of implications for instructional policies are suggested by these conclusions. Students as a group appear to be a little more favorable to an open-circuit lecture in comparison to a traditional large classroom lecture when they are given a choice as to where they will view the televised lecture. This conclusion must be balanced with the observation that students tend to favor the type of presentation to which they are exposed during the semester. In short, if students are exposed to an open-circuit television presentation they will on the average favor it. In the light of this verdict, it would appear possible to teach large courses by television without the use of large classrooms and in the case of many students without lecture classrooms at all.

The apparent desirability from the student point of view of facilities outside the classroom appears linked to the inadequacy of traditional classrooms when they are converted to television viewing rooms. Fixed and uncomfortable seats, poor angles of vision, deficient accoustical qualities, improper lighting and ventilation, etc. discourage attention to the television screen and promote restlessness and disruptive behavior by students. Such behavior can be minimized as a distraction to other students by the presence of a faculty member, but to make such a procedure mandatory would seem to negate the possibility of the reduction of teaching costs which otherwise is promised by the use of television.

The student response to the provisions of the experiment suggested certain innovations in instructional procedures might be based on an open-circuit presentation. The students themselves indicated attention in many residence units, especially dormitories and sororities, was good since here the viewing group normally appeared able to control disruptive behavior. In such residences the lecture viewers constituted a kind of "natural" grouping which had a potential for a self-generating interest in the subject matter and in the academic requirements of the course in question. If the staff of such a course could utilize this semi-organized enthusiasm to further the student committment to his work, it could open up a new area of student-instructor relations which are often suffering a progressive ineffectiveness because of the growing size, anonymity and bureaucratization of our large campuses.

Finally, the fear of the unknown consequences resulting from the viewing of a lecture by non-students appears illusory. The competition of commercial programs or general disinterest in academic subjects appears to be such that consistent non-student viewing of classroom subjects will be done by a small fragment of the local television-set owning population.

In the light of the results of this experiment and the interpretation of these findings, universities with a large resident student body might do well to re-examine the possibility of open-circuit transmission. It can offer economies in the use of classroom space, and it could be a source of new interest and motivation of certain groups of students.

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WHO IS THIS LOWER-CLASS CHILD?

- Robert J. Fisher

Many teachers have at last become aware of social class differences. It is not in vain that they have taken courses in sociology and the social foundations of education. Prior to this they tended to see each child as an individual, a being apart from his own background. But as a result of social class analysis they now have a new set of tags with which to classify children. They now recognize and shudder at the thought of that irreverent, undisciplined, non-motivated, and irrevocably handicapped lower-class youngster.

What is this lower-class child like? An image has been created. He lives in a city slum or in tents and shacks for impoverished migrant families. His parents care nothing about education. His parents neglect him. He suffers from malnutrition, lack of affection, and general misunderstanding. His achievement level is low. His grades are poor. The intelligence tests are biased against him. The teachers do not speak his language. And he fails dismally to meet the middle class teacher's expectations. He swears. He comes to school dirty. He gets into fights. Sometimes he carries a razor or a switchblade. When he reaches high school he wears a black leather jacket and allows his hair to grow unusually long. Perhaps he smokes marijuana and hangs around the streets in the company of potential delinquents or races up and down the highways on motorcycles or souped-up jalopies.

A new stereotype has emerged. Teachers now recognize what their college professors are talking about when they use the term lower class. The image which this stereotype awakens both frightens and arouses pity, but how much basis is there for it?

A group of prospective teachers took a field trip to a lower-class school. They knew it was a lower-class school, because the children who attended were living in a run-down, temporary, government housing project, and the families were among the lowest income groups. The children were both white and colored and the faculty was integrated as well. They interviewed some of the teachers with questions designed to gain verification for the images which they held about lower-class children and their parents.

"Wasn't it true that these parents showed little interest in the school or their children's progress?"

"Oh, no," replied the teachers, "In fact, the parents turned out in large numbers to all school functions. The attendance at parent-teacher conferences was close to 100 percent. They seemed to have high hopes for what the schools might do for the children."

"Were the children unruly or hard to handle?"

The teachers did not seem to think so. They agreed that they did

have to modify some of their conceptions about acceptable behavior, but the teachers did not feel any more plagued by discipline problems than they had been in other classrooms.

"Did they find the achievement level rather low?"

The teachers recognized wide differences in levels of achievement, and could see no distinction between classes they were presently teaching and ones that they had taught in more favored neighborhoods.

The prospective teachers came back to class somewhat disillusioned. They had not received confirmation for their stereotypes. Why didn't these lower-class children behave like lower-class children are supposed to behave? One of the difficulties seems to be that a term used as an ideal-type construct designed primarily for anthropological or sociological research has deteriorated to a set of assumptions and descriptions which lend themselves easily to over-simplification.

There can be no doubt that studies do uncover class systems based upon a differential hierarchy of status. There is no doubt that statistically significant differences exist between social class categories of children in relation to school success. The evidence is fairly conclusive that commonly used intelligence tests do, indeed, discriminate against the vocabulary and motivation of children classified as lower class. But wherever statistically significant differences occur, they cover over the wide range of exceptional behavior within the groups being compared.

The argument here is not so much with the use of social class constructs in helping teachers to accept relevant differences. The real trouble comes with the realization that some teachers are swallowing whole the categories describing social class differences. This may well be doing more to place barriers in the way of better human relations than it does to overcome misconceptions.

It seems evident that our schools in many slum neighborhoods simply are not providing realistically for a large number of the children who attend. This does not mean that they fail with all of the children. They do offer the opportunity for many children to acquire some of the skills and attitudes which will enable them to use the schools as effectively as children in other parts of the city.

One trouble with stereotypes is that the lower-lower class child does not know that he is lower-lower class. He probably would not accept the classification if he did know it. He is just as apt to be insulted if some one thinks of him and treats him as if he were some kind of pariah.

Another trouble with the stereotype about slum children is that most people who live in slums would just as soon live elsewhere. The stereotypes about lower-class youth are applied by teachers to Ne-

groes, Mexican-Americans, and Puerto Ricans whose families are frequently denied access to other neighborhoods. Members of groups who suffer from housing and employment discrimination frequently develop strong motivation to break out of the slums and to improve living conditions. Only when the avenues of escape are cut off by discrimination does apathy develop.

The parents of the children in the temporary housing development are not apathetic or hostile to the schools. As a matter of fact, they show great interest in the potential which the schools offer for their children and frequently hold unreasonable expectations of the hopes which education can fulfill.

In some ways the teacher who did not know about social-class differences had better attitudes about the varying needs of individuals than the teacher who categorizes people too easily. It may come to the point where professors have to spend as much time breaking down stereotypes about lower-class groups as they now do about racial and religious groups. A stereotype obscures differences. The basic democratic value that differences be respected should lead teachers to be very careful about applying ideal-type constructs too indiscriminately. Teachers *do* need to know the social-class background of the children they teach, but to know this is not enough. The next step must be to offer educational opportunities which will provide for the wide range of differences in abilities, interests, and goals which are found among *any* group of children.

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MONEY BENEFITS OF EDUCATION BY SEX AND RACE IN NEW YORK STATE, 1956

William I. Greenwald and Robert E. Weintraub

Economists have long believed that education is a positive income-determining factor. Indeed the notion is implicit, if not explicit, in Smith's recognition of the role played by "the whole of advantages and disadvantages" in choosing an occupation. More recently, attention has been called to substantiating data. By way of illustration, Houthakker's principle conclusions are cited. Using Census data for the entire nation, he found that, irrespective of race, among males over 14 years old "on the whole a longer school attendance is positively correlated with higher mean incomes, except for the age groups under 30."[1] Houthakker also computed capital values at age 14 of life-time incomes for males classified by level of schooling and found that these values increase uniformly with schooling.[2] Thus it would appear that education is, in fact as well as theory, a positive income-determining element.[3]

But little is known about the money benefits which education confers upon males and whites as compared to females and nonwhites. It is of course common knowledge that at all educational levels the incomes of males and whites are larger than those of females and nonwhites. But this does not permit us to say that education pays males more than it does females and whites more than nonwhites, since both sex and race are independent income-determining elements. This paper attempts to compare the money benefits associated with education which accrue to (1) males and females, (2) whites and nonwhites. Specifically, the following question is asked. If the two sexes and the two races were competing rather than noncompeting groups, would males and whites derive larger money benefits from various grades of schooling than do females and nonwhites?

Data collected by the Census for New York State and New York City in the spring of 1957 are used in this study. The Census sampled 1 in 738 households throughout the state, including the city. The tabulations used in this paper consist of, first, money incomes received

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[1] H. S. Houthakker, "Education and Income," *Review of Economics and Statistics*, XLI (February, 1959), p. 26.

[2] *Ibid.*, Table 3.

[3] The term *appear* is used as a warning. As Houthakker recognizes, "we cannot even be sure that the apparent effect of education on income is not completely explicable in terms of intelligence and parents income." *Ibid.*, p. 28.

by state residents aged 14 and over classified by years of schooling and sex, irrespective of race,[4] and second, 1956 money incomes for non-Puerto Rican residents of New York City aged 14 years and over classified by years of schooling and race, irrespective of sex.

The principle defect of these data is that incomes are classified by years of schooling and sex or race, not sex and race. Thus estimates of the money benefits associated with education may be biased. For example, consider the biases that would result in the event that there are disproportionately few nonwhites among females with 12 years of schooling relative to all other groups classified by sex and education. In such instance, the twelfth year of schooling will appear to bestow larger money benefits on females as compared to males than actually is the case. Also females will appear to derive greater benefits from the twelfth year of schooling as compared to other years than actually is the case. We cannot be sure that the data do not contain these and similar or even opposite biases, and they could not be eliminated if they were in fact present. Thus our conclusions must be regarded as tentative and approximate.

The data that are relevant to the money benefits which education confers upon males and females are presented in Tables 1 and 2. Table 1 gives median $[Q_2]$ and first $[Q_1]$ and third quartile $[Q_3]$ incomes, and also coefficients of variation $[Q_3 - Q_1/Q_2]$ and measures of skewness $[(Q_3 - Q_2) - (Q_2 - Q_1) / Q.D.]$ for the two sexes at various levels of education. The number of observations for each sex-education group also is provided. These appear to be adequate except in the case of the $(16 - 17)$ years of schooling groups.[5]

The data in Table 1 tend to confirm the traditional hypothesis that education pays, regardless of sex. In particular, it appears that what is often called "functional illiteracy" (i. e., $0 - 4$ years of schooling) is a serious deterrent to income ambitions. Stated positively, it appears to pay to attend school for at least 5 years, regardless of sex.

Also, the data show that for females, the twelfth and seventeenth and subsequent years of schooling are especially powerful positive income-determining factors. For males, the sixteenth year appears to be crucial. In this connection, median and quartile incomes rise

[4] The State of New York, Interdepartmental Committee on Low Incomes, *Characteristics of the Population, New York, 1956 and 1957*, Bulletin No. 2., Table 13.

[5] The results for both sexes in the (16-17) years of schooling groups are ignored in the analysis because there are too few observations in these cells for them to be taken literally.

TABLE I

Incomes of Males and Females in New York State, 1956

Years of Schooling	MALES						FEMALES					
	Number of Observations	Q_1	Q_2	Q_3	Coefficient of Variation	Measure of Skewness	Number of Observations	Q_1	Q_2	Q_3	Coefficient of Variation	Measure of Skewness
0-4	450	$1067	$2326	$3653	1.12	.03	361	$ 459	$ 923	$1854	1.51	.33
5	173	1571	3057	4154	0.84	-.15	114	603	1227	2375	1.44	.30
6-7	487	1855	3172	4486	0.83	-.00+	309	635	1306	2228	1.14	.16
8	1094	2384	3769	5021	0.70	-.05	695	616	1407	2532	1.36	.17
9-11	1292	2614	4101	5327	0.66	-.10	811	619	1566	2705	1.33	.09
12	1450	3275	4667	5861	0.60	-.08	1220	1019	2350	3447	1.03	.09
13-15	480	2912	4789	6140	0.67	-.16	288	814	2314	3860	1.32	.01
16	371	4224	6355	7000+	0.44[a]	-.53[b]	228	878	2643	4500	1.37	.03
(16-17)	26	1550	3500	6250	1.34	.17	13	1250	3625	4625	0.90	-.41
17 or more	267	4579	7000	7000+	0.35[a]	-1.0[b]	80	1500	4444	5882	0.99	-.34

[a] At minimum.
[b] At maximum; sign ignored.

sharply in the twelfth and seventeenth and subsequent years among females, and in the sixteenth year among males.[6]

Another interesting feature of the data in Table 1 is that for both sexes those with 13-15 years of schooling do not, on the whole, achieve significantly higher incomes than those with 12 years of schooling. Perhaps this indicates the operation of a "weeding-out" process.

The coefficients of variation do not appear to be excessive. Moreover, for both sexes the greatest variability is found in the 0–4 years of schooling group. Measures of skewness, on the other hand, are relatively high for females at both ends of the education scale, and for males at the upper extreme. More importantly, the upper level schooling distributions of both sexes are negatively skewed. This latter suggests that college and post graduate training are not, by any means whatever, annuity policies.

Attention now is called to the data in Table 2. These data throw light on the question of which sex derives the largest money benefits from education; the two sexes being assumed to be competing groups.

TABLE 2

Incomes of Males and Adjusted Incomes of Females in New York State, 1956

Years of Schooling	MALES			FEMALES		
	Q_1	Q_2	Q_3	Q_1	Q_2	Q_3
0–4	$1067	$2326	$3653	$1067	$2326	$3653
5	1571	3057	4154	1399	3092	4679
6–7	1855	3172	4486	1473	3291	4389
8	2384	3769	5021	1429	3546	4988
9–11	2614	4101	5327	1436	3946	5329
12	3275	4667	5861	2364	5922	6791
13–15	2912	4789	6140	1888	5831	7604
16	4224	6355	7000+	2037	6660	8865
(16–17)	1550	3500	6250	2900	9135	9111
17 or more	4579	7000	7000+	4638	10652	11328

[6] Also note that among females the third quartile value rises fairly sharply in the sixteenth year, and among males the median and both quartile incomes rise fairly sharply in the eighth and twelfth years and the median and (possibly) the third quartile values in the seventeenth and subsequent years.

Specifically, the data are estimates of median and quartile incomes for the two sexes at all education levels, under the assumption that all differences in their powers to obtain income are caused by differences in their receptivities to given levels of education. Income differences between the two sexes in the 0–4 years of schooling groups are regarded as reflecting inherent differences in income capacities. Accordingly, in Table 2, median and quartile values of female incomes in all education groups are adjusted upwards by the multipliers which equalize values for the two sexes in the 0–4 years of schooling group.

Using the first quartile values, the data in Table 2 indicate that schooling rewards males more than it does females, except for the twelfth and seventeenth years. But the median and quartile incomes show that education brings roughly equal money benefits to the two sexes until the twelfth years of schooling. For the twelfth and all subsequent years the dollar benefits appear to be substantially larger for females than for males. Thus it seems reasonable to conclude that, if the income powers of the two sexes differed only because education made them different, it would pay females more than it does males to complete high school and college and undertake at least a year of graduate training.

The data that are used to estimate the money benefits which school attendances bestows on whites and nonwhites are presented in Tables 3 and 4. Table 3 gives median and quartile incomes, coefficients of variation, and measures of skewness at all levels of education for the two races. The number of observations is reasonably adequate in all cells, except for those pertaining to the nonwhite groups with more than 12 years of schooling.[7]

Viewed alone the data in Table 3 on education and the incomes of whites point to conclusions that are a mixture of those inferred earlier on education and the incomes of males and females. First, functional illiteracy appears to be an impediment to achieving income ambitions. Second, median and quartile incomes for the 13–15 years of schooling groups are not significantly higher than the counterpart incomes for the 9–11 and 12 years of schooling groups, which may suggest the operation of a "weeding-out" process. Third, sharp rises in at least one of the three measures of group incomes (i.e., Q_1, Q_2,

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[7] The results for nonwhites with 13-15, (16-17), and 17 or more years of schooling groups are ignored because in each of these cells there are too few observations to take them literally. Instead the analysis deals with the data on all nonwhites attending school for more than 12 years and compares this combined group to the aggregate of all whites with more than 12 years of schooling. In this connection, see the bottom rows of Tables 3 and 4.

TABLE 3

Incomes of Non-Puerto Rican Whites and Nonwhites in New York City, 1956

Years of Schooling	Number of Observations	WHITES					Number of Observations	NONWHITES				
		Q_1	Q_2	Q_3	Coefficient of Variation	Measure of Skewness		Q_1	Q_2	Q_3	Coefficient of Variation	Measure of Skewness
0–4	422	$709	$1594	$2978	1.42	.22	149	$912	$1929	$2301	0.20	−.47
5	108	886	2381	3875	1.25	−.00+	66	1318	2391	3167	0.73	−.13
6–7	298	1240	2564	4068	1.10	.06	114	1397	2211	2961	0.71	−.04
8	802	1482	3015	4569	1.02	.01	163	1558	2444	3208	0.68	−.07
9–11	803	2240	3323	5284	0.92	.29	197	1223	2331	3194	0.84	−.13
12	1165	2317	3687	5086	0.74	.01	172	1600	2453	3320	0.70	.01
13–15	369	2007	4096	5540	0.86	−.15	29	1312	3083	4438	1.01	−.13
(16–17)	325	1655	4316	6813	1.19	−.03	14	1500	3500	4312	0.80	−.49
17 or more	195	3813	5788	7000+	0.55ᵃ	−.24ᵇ	3	1750	2500	4250	1.00	.40
More than 12	889	2123	4553	6765	1.02	−.03	46	1438	3200	4389	0.92	−.19

ᵃ At minimum
ᵇ At maximum; sign ignored.

and Q_3) occur in the 8, (16 – 17), and 17 or more years of schooling groups. Fourth, the 0–4 years of schooling groups shows the greatest variability. Finally, the distributions of incomes in the 12 or more years of schooling groups are negatively skewed, which suggests that college and graduate trainings are not annuity policies.

With respect to nonwhites the data in Table 3 show that the achievement of literacy brings money benefits but additional schooling, through the twelfth year, yields only minor rewards. On the other hand, school attendance beyond the twelfth year confers substantial money benefits to many nonwhites. This is evidenced by the sharp rises in the median and third quartile incomes for the combined group consisting of all nonwhites attending school for more than 12 years.

Other interesting features of the data in Table 3 for nonwhites are, first, that, in general, variability rises as years of schooling increases, and second, that almost all of the distributions are negatively skewed. These two features indicate that there is little, if any, possibility of individual nonwhites achieving incomes that are considerably above measures of the central tendency of the group as a whole. In this connection it is noteworthy that no nonwhites in the sample received incomes above $6,999, whereas 374 of 4,487 whites, or roughly 8.4 per cent, received incomes of $7,000 or more.

The data in Table 4 show median and quartile incomes for the two races at all education levels, after adjusting nonwhite values by the multipliers which equalize median and quartile incomes for the two races in the 0–4 years of schooling group. These data indicate that from the fifth through the twelfth years, whites benefit substantially more than do nonwhites from school attendance. On the other hand, the absolute money benefits which college and graduate school bestow are about equal for the two races.

Doubtless, many of the data and statements of this paper require clarification. The following explanations of the most controversial of these data and statements appear to be reasonable. First, the fact that the 0–4 years of schooling groups received relatively low incomes might be taken literally, or, alternatively, might be explained as arising because there are disproportionately large numbers of the very old in the 0–4 years of schooling groups.[8] Second, the fact that females completing at least one year of graduate school achieve relatively high incomes is probably best explained by the consideration that graduate training is a prerequisite for teaching, nursing, and many other occupations which offer relatively high income opportuni-

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[8] Data limitations prevent testing this latter hypothesis.

TABLE 4

Incomes of Whites and Adjusted Incomes of Nonwhites in
New York City, 1956

Years of Schooling	WHITES			NONWHITES		
	Q_1	Q_2	Q_3	Q_1	Q_2	Q_3
0–4	$ 709	$1594	$2978	$ 709	$1594	$2978
5	886	2381	3875	1028	1985	4085
6–7	1240	2564	4068	1090	1835	3820
8	1482	3015	4569	1215	2029	4138
9–11	2240	3323	5284	954	1935	4120
12	2317	3687	5086	1248	2036	4283
13–15	2007	4096	5540	1023	2559	5725
(16–17)	1655	4316	6813	1170	2905	5563
17 or more	3813	5788	7000+	1365	2075	5483
12 or more	2123	4553	6765	1122	2656	5662

ties to women. Finally, the fact that nonwhites who attended school
for longer than 12 years achieved high incomes relative to nonwhites
in general probably can be accounted for by the consideration that
some college training is an advantage, if not a prerequisite, for civil
service work which offers relatively high income opportunities to
nonwhites.

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LABOR EDUCATORS ANALYZE VALUES AND OBJECTIVES IN U. S. SOCIETY

Report of a conference conducted by the American Labor Education Service

Barbara Wertheimer

For those engaged in the work of trade union education, the American Labor Education Service needs no introduction. It is an organization which has pioneered in the workers' education field for thirty-three years, always seeking to meet new and as yet unmet education needs of unions in the United States and Canada. Its programs have aimed at broadening trade union understanding of our society, within the framework of the economic concerns of workers.

Thus its annual week-end conference of 1960, conducted in cooperation with Workers' Education Local 189 of the American Federation of Teachers, explored some of the values and objectives of our society today.

This conference draws together union staff members involved in education, university workers' education staffs, and union officers and rank-and-file interested in this area of union activity. It included, this year, 227 participants from sixteen states and sixty-four cities. They came from twenty-five trade unions and twenty-one colleges and universities. Representatives from nine governmental bodies attended.

In analyzing the role of trade union education in meeting the challenges of society today, the conferees examined the need for change brought about by the national and international forces determining the day-to-day problems in workers' education. The conference posed many questions, for which no one presumed to have definitive answers. Yet the questions themselves are important in indicating the direction in which many professionals are looking, in this expanding area of Adult Education.

A provocative appraisal of U. S. society, its values and objectives, opened the conference. Irving Howe, Professor at Brandeis University, author and critic, raised many questions on the problem of the "mass" taking precedence over the individual. Professor Howe asked the conference to consider some of the problems that have come with progress. Technology has brought with it much anxiety. Nationalization can also bring autocracy. The masses of workers fight for the good life up to a point—and then seem content with mediocrity. Some intellectuals have moved away from the labor movement to which, formerly, they were willing to devote themselves.

Professor Howe challenged the delegates to seek for ideals that would involve liberals, intellectuals and the labor movement in a joint search for what he termed a new temper in American life.

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After the stage for discussion had been set on this theoretical level, Everett Kassalow, who is Research Director for the Industrial Union Department of the American Federation of Labor-Congress of Industrial Organizations, filled in with specific statistics on today's labor movement. In terms of the forward march of labor, unionizing the white-collar worker is especially urgent. As these workers become an increasing proportion of the total work force, the strength of labor's social-democratic influence depends on the extent of their organization.

Jules Manson, District Director of the New York State Board of Mediation, added to the dimension of thinking on this subject through his suggestion that workers' education be the vehicle for trade unionists to achieve heightened intellectual skill and moral courage.

In true conference style, the group divided into four sub-groups for the first afternoon's discussions, which included four aspects of the trade union movement in our changing world.

1) *How to safeguard union democracy.* In examining this problem, the group had the invaluable help of Professor Clyde Summers of Yale University Law School, who pointed out the enormous contribution that labor in this country has made, through collective bargaining, toward laying the foundations of democrary in industry. As bigness has overtaken so many aspects of American life, so it has also affected unions, which means that internal union democracy needs zealous guarding or it may suffer. Here workers' education can provide the training so that union members can take on the many responsibilities of democracy.

2) *How to improve communications between union leadership and the rank-and-file.* When communications break down, the level of democracy in the *local* union is affected as well as in the *national* union. Lewis Carliner, Assistant to the Director of International Affairs of the United Automobile Workers of America, focused the groups' attention on the basic factors in this problem: the methods and techniques for reaching the rank-and-file, for involving the union member.

3) *How to understand the image in other countries of the American labor movement.* Several trade union staff members who had studied or worked abroad helped this discussion group to see the difficulty of factoring out the attitudes which workers and governments abroad hold toward the American labor movement from those they hold toward the United States as a whole. Here, then, a positive and consistent international and domestic program on the part of the American trade union movement could contribute to better understanding of American labor on the part of other countries.

4) *How to formulate new goals for trade unions in this changing society.* As conformity and apathy affect the American people, so they affect workers in unions as well. The need was voiced for finding ways of exciting interest in social-democratic ideals, of inspiring dedication to the deepest goals of American society.

Thus the climax of the week-end conference came with a discussion of new directions in workers' education. For this the entire group of trade union and university educators turned their thinking to the role of workers' education in meeting the challenges which face the labor movement today.

In opening the group discussion here, Lawrence Rogin, Education Director of the AFL-CIO, first drew from the experience of the past. The history of American trade unionism reveals that in periods of stress, in response to situations demanding deeper knowledge, always there has been an increased desire for understanding and education.

While labor faces a crisis today, it has not yet worked out a way of meeting it fully. Some of the key issues which confront unions, as Rogin saw it, include: the problems presented by union bigness; the implications of economic successes in the collective bargaining area; growing international trade and its ramifications for workers in many industries; the conflicts between blue and white-collar workers; and, indeed, all that happens outside the shop that affects what takes place inside the shop.

Focusing the group's attention on five areas for thought and discussion, Rogin asked: How is the public image of the labor movement created? How can we promote understanding of the development of modern society, so that we gain a needed flexibility in handling the problems which arise? What can we do to encourage democratic participation in the large organizations which unions have become? How can we develop a deeper understanding of the forces of nationalism and internationalism? How can we answer the needs of the new generation of labor leaders to understand and become a part of the historical labor movement?

The panel of workers' education experts who discussed Rogin's perceptive remarks dealt with some of the ways of achieving these goals. They talked over who should do the teaching of trade union courses and programs, and how this should be done. The consensus was that unions should more fully utilize the facilities of universities, pressing for services equal to those provided by universities to other segments of society. Teaching must still center on real issues, so that economic, social and political aspects of problems faced by workers and their unions can be more clearly and directly understood.

If more questions were raised that it is possible to answer, then it is safe to conclude that this conference was both provocative and stimulating. Yet this week-end gathering adjourned on a positive and and challenging note: workers' education in the United States has the opportunity to foster programming that extends workers as people, that stretches minds and opens new horizons of thought and activity. Over the coming years, it must meet the challenge which is implicit in this opportunity.

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REGIONALISM, RELIGION, AND THE POLITICAL ATTITUDES OF COLLEGE WOMEN

Sarah Frances Anders

The 1960 presidential campaign precipitated renewed interest in political ecology and the social psychological factors of voting behavior. The purpose of this study was to evaluate the pre-election awareness of an increasingly important segment of the voting population—women—in a relatively homogeneous regional, religious, and educational environment: the denominational college for women. An earlier study has suggested that the suburban wife today might well be the political leader of the family,[1] while another suggested the political significance of a strong "father image."[2] One research study indicates that within the Catholic and Protestant congregations (more so than in the Jewish), political awareness tends to increase with education.[3] Is the college environment today making a major contribution to female voting behavior or do parental and regional influences weigh more heavily in the choice of candidates and political ideas in general?

The sample of women studied in this survey consisted of the total resident population (221, or one-third of the total student body) in a small Protestant college for women in the Southwest. Approximately 70% were from the Southwest (8% were international students), and 92% were Protestant (80% of one denomination). A four-page questionnaire secured confidential responses on background data, evaluations of respondents' own political attitudes, as well as those of their parents and friends. The total sample was interviewed during a four-day period in the late spring, 1960.

PARENTAL AND BACKGROUND FACTORS

The general question behind the study was "did present environmental and academic factors have more influence upon political attitudes of these young women than family and regional factors—had college effected some weaning process from parental influences?"

In general, this study indicated that regional influence was greater in the realm of party identification than in choice of a specific can-

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[1] "The Suburban Voter: Which Way Does He Lean?" Newsweek, 49 (April 1, 1957), p. 42.

[2] Robert E. Lane, "Fathers and Sons: Foundations of Political Belief," American Sociological Review 24 (August, 1959), pp. 502-510.

[3] Gerhart H. Saenger, "Social Status and Political Behavior," American Journal of Sociology 51 (September, 1945), pp. 103-113.

didate. Students from the Southwest (and the South) tended to see themselves as Democrats and Independents, whereas others had more varied party affiliations.

The size of community in which the respondent had grown up had little bearing on her identification with a political party, the degree to which she felt informed about the campaign, or the particular sources of influence on her political attitudes. Since the majority of these young women were from the same state, which had tremendous increase in metropolitan population since 1950 and yet had remained full of contrast from open country to metropolis, this seemed to indicate the present college community had more influence upon attitudes and identifications.

The economic level of the parental family likewise seemed to have little relation to the students' identification with a political party, campaign interest or information. "Family holdings" was a score based on home ownership, stocks and bonds, property, cars, and the like; and it produced no significant relationships with the above mentioned factors. However, family income was associated with the respondents' preferences among the candidates (beyond the .001 level). The lower income levels were less in favor of Kennedy and Rockefeller.

Student evaluations of religious behavior and parental political behavior produced some interesting and significant chi square results. Catholic parents were seen (by their children) as being limited in choice of candidates (significant beyond the .001 level), and Protestant parents were viewed as opposed to Kennedy (.05 level). Baptist students did not necessarily see their parents' choice of a candidate or their position on Kennedy as being in agreement with their own, but they did rate their fathers as more influential than any other source in the patterning of their own behavior (.05 level). More active Baptist parents were believed to be opposed to Kennedy (.01 level), but not necessarily agreed on any other single candidate. It was quite different among Catholic students; they felt that they and their parents were in complete agreement (significant beyond .001 level). In general, the more religiously active parents were judged to be in closer agreement with the daughters' own views on candidates (.001 level).

The political identification of each parent was related significantly (.001) to that of the student, as well as agreement concerning Kennedy as a candidate (.001). But there was little relationship between parents and students on the degree of awareness about the campaign and choice of candidates.

PRESENT COLLEGE AND PEER GROUP INFLUENCES

Every chi square test relating political attitudes of these women students with their present academic and peer group factors produced

statistical significance at the .05 level or beyond. This would seem to indicate that the college environment and its associations had more influence on the political opinions of these young women than did most socio-economic factors of the parental family.

Age and academic classification were both influential in the amount of information students believed themselves to have about the campaign. Students of voting age and over tended to be better informed about political matters (.05 level). Upperclassmen, also, appeared to read more news magazines and hear more newscasts about the campaign and its issues (.01 level), and, in general, attributed their attitudes to other influences than that of their parents (.001 level).

The religious affiliation of these college women was related significantly to their choice of candidates and source of political influence. Protestants, as a rule, showed greater variety in their selection of a candidate, but generally were unfavorable toward Kennedy (.01 level). Most of them (Protestants) felt their fathers had been the major influence in their own political views (.001 level.)

The respondents regarded themselves as being very much like their friends in their interest in the campaign and choice of a candidate (.001 level). This sample of women students also did not believe friends whom they rated "very interested" in the campaign vary as much in their choice of a candidate as would their less interested friends.

Exposure to government courses apparently was a significant factor in determining these students' interest in the campaign and in increasing their political awareness (.01 level). It did not, however, seem to produce any change in their attitudes toward voting for a Catholic candidate.

IIMPLICATIONS OF THIS STUDY

A number of observations may be made with regard to political attitudes and the presidential campaign relative to this unique sample of college women. One is that these young women are not only predominantly Protestant, they are residing on a denominational college campus. Another is that their responses regarding their own attitudes and those of parents and friends, being subjective, might vary within a month after the interview or during the remainder of the campaign. The questionnaires were completed before the party conventions, hence the response options, particularly on candidates, were greater than they would be at this writing. Nevertheless, from this homogeneous group, it appears that regional background, regardless of the present location of the individual student, is still an influential factor in political views. Parental religion and party identification

are more significant than family income and holdings in affecting their opinions. It seems that, for these students, fathers are still the political heads of their families. But parental and background influences do not tend to be as strong as those in their present academic and personal environment. Their close peers, their increasing exposure to college in general, and to government classes in particular, exert strong pressures on their interest in political matters and their choice of candidates and party.

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POPULATION, FOREIGN AID, AND ETHICAL VALUES

Harold H. Punke

A marked increase in world population has occurred during the last two centuries, especially during the last fifty years. Increase has become rapid in technologically backward areas, with the introduction of health practices from elsewhere and with improvement in local agriculture. Some writers refer with anxiety to a "population explosion." They point to Malthus' idea that population growth outstrips food supply—and other material resources.

1. *Technology and resources.*—Anxiety about population increase often fails to relate the increase to technical developments which affect man's capacity to produce food and supply other needs. It is assumed that nature furnishes the resources, and man only harvests or exploits. But even American Indians before Columbus got beyond a mere hunt-and-harvest culture. They planted corn, squash, and beans, tended and fertilized them somewhat, and stored harvests for later use. Thus they applied technology to what unaided nature offered. The development of scientific agriculture, in America and some other places, extends such technology. The uses by modern industrial society of fuels, metals, building materials, drugs, gases, etc., also extend technology.

As civilization develops, a usable resource ceases to be merely an item supplied by nature. It is increasingly man's technology that makes it a resource. The oil, uranium, and hydro-electric potential of present-day America were in the area when it was occupied by pre-Columbian Indians, but they were not resources because the Indians did not know how to use them. Modern knowledge makes them resources.

In many regions, knowledge and the "creation" of resources in the physical world increase faster than population. In technologically advanced countries, where population has increased most rapidly during the last two centuries, there is a higher material standard of living than there was two centuries ago. Food and other material goods have increased faster than population—not the reverse, as per Malthus.

To assume that man has nearly exhausted his capacity to extend the uses of what unaided nature provides—in earth, sea, air, and outer space, shows lack of imagination regarding science and technology—including the social and mental sciences. Food production is often emphasized by neo-Malthusians. Corn is a major basis of food in America. Our growing surplus of corn, and of other agricultural products, is called "burdensome." And some agronomists state that with better application of present knowledge we could double our

corn production.[1] Much the same applies to wheat, cotton, and some other farm products. And what applies to agriculture, applies to many other avenues through which man draws on the materials of nature.

A major limitation of "population explosionists" is that for them "natural resource" is a static concept. They fail to see that it is primarily the knowledge and imagination of man which transforms nature's materials into resources. His capacity to transform has increased greatly during the past generation. It will increase faster in the future. The knowlege and competencies of the people thus constitute the major resource of any modern industrial society. This will be even more true in the future.

Fictions about "standing room only," presumably including the floor space of multi-storied buildings in expanding urban centers, are not particularly new or challenging. Many problems are more immediate. What is done about them will greatly influence long-range speculations. However, some immediate problems do concern social policy on population.

2. *Ethical values and population policy.*—Technical and economic aid to undeveloped regions has religious, humanitarian, political, and other ramifications. Humanitarian brotherhood urges us to help others who are less able than we are to help themselves. Some aspects of the brotherhood concept relate to people who are now living. Brotherly concern for people who lived in the past is less important in this discussion than that for those who may live in the future.

Individuals and culture groups vary in their concern for subsequent generations. In some cultures, most parents strive to make the lives of their children more pleasant and fruitful than their own. Part of the hoped-for improvement relates to material comforts and longevity. Part relates to freedom, social equality, personal dignity, and friendly consideration for fellowman. Evidence of such interest in "future brotherhood" appears in sacrifices by parents for the education and development of their children. Birth control and family planning, which aim to regulate the number, age distribution, and other relationships among brothers (and sisters) of the next generation, directly affect future brotherhood status. Sterilization—by isolation, surgery, pills, etc., helps determine who will produce the brothers of the future. A practice may be rigorously enforced by the group, or the individual may have some option. Greater variation in kind and amount of group pressure will be possible, as knowledge about man's genes and fertility increases.

The concept of human brotherhood has had a varied history—

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[1]*Chemurgic Digest,* 18 (December , 1959) 1.

among Jews, Christians, and other religious or culture groups. But it was largely a vague hope or ideal until modern technology was able to produce enough material goods and leisure so that one had sufficient for himself and could share with his brother. One who is near starvation is unimpressed by possibilities of sharing with a human brother—in some distant region.

As technology implements brotherly consideration for fellowman, it also modifies the consideration. Brotherhood modifies first along lines which it is easiest for technology to reach—food, housing, or sanitation, in contrast with religion, family relationships, or government. This results laregly from the direction given to research which underlies technology. But technology helps modify ethical practices.

a. *Foreign aid and mankind's cultural growth.*—During recent decades, technology has helped modify ethics in international relations. Global competitions in ideology and material power, result in a struggle for the affiliations and resources of technologically backward peoples. Hence brotherhood and related ideals concerning human welfare become interwoven with power politics. Much confusion results—concerning what is mutual protection, what is investment, or what is humanitarian consideration for fellowman. Each side heralds it as humanitarian and brotherly to rescue the uncommitted from clutches of the other side.

In the situation described, the technically advanced competitors direct aid to technically undeveloped countries—often to the neglect of the home people. With regard to general advancement of the human race as primary value, and competing power politics as secondary, several problems arise. Some of them relate to population increase.

One immediate consequence of economic and technical aid to undeveloped regions is a stimulation of population growth there. That is, an increase of population among the most ignorant, diseased, ill-fed, and otherwise technologically backward peoples of the world. The persons added to such population groups, by reduced infant mortality and otherwise, are typically in the cultures in which they have about the least opportunity to develop educational and other competencies for contributing to knowledge and raising the status of mankind.

By contract, a system of ethics and a population policy which seeks to improve the general status of mankind, would seek to increase population in those parts of the world in which children have the best prospects for nutrition, health, education, longevity, and other assets that facilitate their making creative contributions. That is, in the technically advanced areas of the world, not in the technically backward

areas. One thing that many technically backward areas need first is limitation of population, to produce a reserve of free time and energy for other developments.

b. *Technology and family pattern, in improving man's status.*—Foregoing suggestion may imply a more deliberate influence by science and technology on ethics, family custom, and biological urge than the past has recognized—even in technically advanced countries. But expansion of scientific knowledge in most spheres tends to be accompanied by planning. A plan is a blueprint for achieving desired goals, and may relate to any phase of human life or aspiration.

There are scattered practices which point toward enhancing mankind's status in the world through stimulating numerical increase and individual potential among those who are already most competent, rather than directing attention to those who are most handicapped. In American society, scholarship or research grants in universities and high-level jobs in industry usually go to persons who are best qualified by physical characteristics, education, and experience—not to those least qualified. In a less precise way, the same applies to officials elected to public office. Favoritisms and other corruptions do not negate the principle, unless they became so numerous that the system breaks down. If so, the culture of which they were a part loses its vigor for leadership.

3. *Implications and prospects.*—Present international relations make the action of one technically strong group of countries dependent on what its competitors do. It is impossible to forecast how long this situation will continue or how intense it will become. But question arises as to how much the current growth of major competing peoples is stunted by the drain for aid to backward areas. This question should concern all technically advanced areas—in America, in Western and Eastern Europe, and some places in the Orient.

Immediate concern relates to the amount devoted to foreign-aid, in relation to that devoted to developments at home—for research and expanding knowledge in various fields of interest. But more important is birth-rate philosophy. Mankind will likely advance more rapidly by stimulating birth rate in technically advanced countries in which children have most favorable prospects for development, than by stimulating population increase in technically backward countries where such prospects are meager.

Part of what is said about the relative status of culture groups, applies to individuals and small groups within cultures. Earlier reference to scholarships and sterilization is illustrative. Some consideration may relate to public welfare provisions—to concern for industrial or economic "accidents" beyond control of the afflicted, relative to

such personal traits as creativeness, diligence, selfishness, indifference, or ruthlessness. Moreover, in any generation there are individuals who, because of ignorance, disease, or other circumstances, are so retarded that narrow limits remain concerning the extent to which they can be helped into constructive citizenship. Such persons deserve consideration, but hardly from the standpoint of emphasizing potentialities.

Progressive government means that economic productivity and tax structure are so organized as to result in abundant material goods, and to distribute them so that the most creative elements of the population are most appropriately supplied. In some countries private foundations contribute to this end. The view noted typically emphasizes the needs of children and youth, with increasing selectivity as they enter and advance through mature life, but it does not ignore old people. It might place more emphasis on intellectual competence, as young people seek mates.

A society which devoted its major resources to providing for its least competent groups, would have a dim future. The same applies to mankind generally. To use an extreme illustration, mankind would not be likely to progress much by staking its biological and cultural future on developing the Australian Bushman, and neglecting the peoples which are already technically and culturally advanced. This applies to increase in number of persons, as well as to growth in knowledge and cultural achievement. The technological societies of the West can probably make their greatest contribution to mankind through research and expansion of knowledge, increasing the competencies and creativeness of their own people, and increasing their populations—the numbers who have the educational and cultural opportunities which those societies are able to provide. Hence, much can be said for a vigorous, progressive, and growing America—as example and influence in the world. The nation's educational and cultural programs should reflect this point.

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RESEARCH IS ESSENTIAL

Maurice P. Moffatt

Research activity and experimentation are links in the chain of progressive change in our contemporary society. The creativity and artistry of research can be appreciated in education as well as in industry. Investigators are engaged in research in many fields with an eye on the future demands of the consumer. They are creating promising new materials and developing new techniques applicable to the procedures for manufacturing products. The techniques and tools of research are used with practical intelligence in solving problems. A common-sense approach in research is essential if we hope to reveal a new and fresh viewpoint. A force of positive activity is released for those who delve into the methods and procedures of research to discover a solution for a complex problem or for generating ideas. Each new discovery stimulates interest and opens the way to further research possibilities in the field of education. A research program is a must for providing a greater impetus in the search for new knowledge. It can assist in meeting new needs in the changing face of education. The continuous expansion of the educational structure creates numerous opportunities for experienced researchers to explore with new studies for meeting projected needs.

There is currently a strong desire to improve the methods of instruction and to enrich the materials for learning in all fields at the various levels of instruction. Improved programs for instruction and for all age groups breathes new life into opportunities for acquiring knowledge. A broad research program is needed in most areas or fields to meet changing needs of a particular community or region. Coordinating instruction into a smooth pattern emphasizes investigation and the application of cooperative research findings. Active investigation is a major responsibility for keeping instruction in line with modern trends. Continued research rolls back the existing boundaries and exposes new frontiers of knowledge.

Education has many opportunities to make effective use of the tools and facilities for modern research. Creative techniques can be developed by students working with experienced instructors. In this manner they are broadening their skills and experiences. Applying today's knowledge of research in a specific field is a means of uncovering more effective approaches to learning. Opportunities in the field of research tend to unveil hidden talents that come to light for the individual or group.

A natural setting and/or laboratories with modern equipment are

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the appropriate centers for various types or research. Lectures and experimentation at the college or university level should stir enthu-siasm and arouse interest for the students, thus furnishing an incen-tive to probe into a problem or undertake a specific project. Further-more, research is a "proving ground" and opens an avenue to a variety of skills, occupations, and professions. It is in the sphere of this type of training that the basic contributions are generally made with new research possibilities.

Modern instruction requires that the individual think in the ac-quisition of new knowledge and understanding. When applying a degree of intelligence and effective skills in a situation, there seem to be no boundaries for the investigation in the course of this probing. Creativity is widened while achievements and ideas are communicated into the stream of accomplishment. Today's society requires that the individual in various fields and professions constantly replenish his store of information. This flow of ideas and new knowledge provides a stimulus to remaining ever alert to the sweep of events, research findings, and discoveries.

Research is an endless process in education and requires con-siderable encouragement for those engaged in this task. The con-temporary impact upon the everwidening avenues of society em-phasizes the growing importance of sociology and anthropology. The sociologist can apply his knowledge in aiding and giving direction for some of society's complexities and problems. Studies and surveys reveal interesting findings and help to pinpoint the growing results of rapid change in modern living The constant surge to the suburbs and country living require adjustments for the individual. Research in urban society and suburban life with its related, unique problems holds many secrets for the researcher.

The drastic increase and shift in population with its social and economic complications requires constant study through research. The nation's changing employment needs for the future have to be surveyed with the view of developing a program of education. This includes the young as well as the older individual who has certain basic needs to be met through education and related experiences. New industrial development and the increased number of those reaching retirement age each month need to be evaluated. Reclaiming people for business and industry due to automation and industrial shifts requires the reteaching of appropriate skills.

More extensive research and study are needed in the future to improve through education our present knowledge for helping the aging. Sound research in this area will require ideas, energy, and de-termination on the part of those doing the investigation. Research has

increased in our universities and colleges in the recent decade. Some extensive studies or programs have been conducted with a view to improving instructional techniques and employing new equipment and materials. However, in looking ahead to increased enrollments, curriculum changes, and methods of instruction, much investigation will be essential. Expanded facilities for this new field in the realm of education is most important for immediate consideration. Specific problems and questions should be analyzed in the light of present and future needs in this segment of our population which continues to rise. It is supposed that such knowledge should become a growth and development process with emphasis upon both the mental and physical aspects of the individual's living.

A study of industrial change and emerging occupational opportunities is essential in contemporary society as it relates to planning a broad program for post secondary, vocational education, and adult education. This is particularly true in developing and learning suitable new skills and for meeting the new needs of older workers with previous experience. Therefore, a major area in the future will be education geared for beyond the secondary level. This will call for the acquisition of both new knowledge as well as skills.

In conclusion, broader research and study of an educational type which explores new horizons and extends frontiers, holds the key to rich, new knowledge. Such a venture is an invitation to learning and to developing new approaches for improving instruction. The problems that lie ahead will have a tremendous impact upon all aspects of society. Research has much to contribute in helping to find a solution for many, seemingly insoluable problems. The effects of the rapid growth of science and technology alone upon the nation and world will provide a vast amount of change for civilization. Other emerging factors large in scope will be charged with new innovations and ideas which will encompass events that should stir the imagination of the individual.

No doubt research and experimentation, through education, will help in revealing new approaches, concepts, methods, procedures, techniques, and resources for exploring problems facing society.

Appropriate funds should be allocated for research and experimentation at all levels of instruction. The classroom teacher and college professor with the essential facilities, sufficient time and resources could achieve at a high rate of accomplishment in the improvement of education.

The decade ahead will call for new ideas and techniques in the learning process. Teachers must be competent in the handling of new materials, equipment, and even in the use of teaching machines in the

instructional process. Long-range planning is essential for introducing new ideas, techniques, and programs. New practices and a modern curriculum for a more effective education can be one of the goals of forward-looking research.

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